#### What is claimed is:

# 1. A compound represented by the following formula 1:

$$Z = \begin{bmatrix} A''_n \\ B''_m \end{bmatrix} X$$

$$R''$$

$$\begin{bmatrix} 1 \end{bmatrix}$$

## wherein Z is

n, m, q and r independently represent integers from zero to 4 provided that  $n + m \le 4$  and  $q + r \le 4$ ; p and s independently represent integers from zero to 5 provided that  $p + s \le 5$ ; a and b represent double bonds which may be present or absent; when present, the double bonds may be in the E or Z configuration and, when absent, the resulting stereocenters may have the R-or S- configuration;

R and R' each independently represent a hydrogen atom; linear or branched  $C_1$ - $C_{20}$  alkyl; linear or branched  $C_2$ - $C_{20}$  alkenyl; - $CO_2Z'$ ; - $CO_2R'''$ ; - $NH_2$ ; -NHR'''; - $NR_2'''$ ; -OH; -OR'''; - $CONR_2'''$ ; halogen atom; optionally substituted linear or branched  $C_1$ - $C_{20}$  alkyl; optionally substituted linear or branched  $C_2$ - $C_{20}$  alkenyl;

R" independently represents a hydrogen atom; linear or branched  $C_1$ - $C_{20}$  alkyl; linear or branched  $C_2$ - $C_{20}$  alkenyl; - $CO_2Z'$ ; - $CO_2R'''$ ; - $NH_2$ ; - $NH_2$ "; - $NH_2$ "; - $NH_2$ "; -OH; -OR"; halogen atom; optionally substituted linear or branched  $C_1$ - $C_{20}$  alkyl; optionally substituted linear or branched  $C_2$ - $C_{20}$  alkenyl;

R''' independently represents a linear or branched  $C_1$ - $C_{20}$  alkyl; linear or branched  $C_2$ - $C_{20}$  alkenyl; or  $-(CH_2)_x$ -Ar, where x represents an integer from 1 to 6 and Ar represents aryl;

R'''' independently represents a hydrogen atom; optionally substituted  $C_1$ - $C_{20}$  alkyl; optionally substituted  $C_1$ - $C_{20}$  alkoxy; optionally substituted  $C_2$ - $C_{20}$  alkenyl; optionally substituted  $C_6$ - $C_{10}$  aryl; or  $NR_2$ ''' represents a cyclic moiety;

Z' represents a hydrogen atom or a pharmaceutically acceptable counter-ion;

A, A' and A" each independently represent a hydrogen atom; C<sub>1</sub>-C<sub>20</sub> acylamino; C<sub>1</sub>-C<sub>20</sub> acyloxy; C<sub>1</sub>-C<sub>20</sub> alkanoyl; C<sub>1</sub>-C<sub>20</sub> alkoxycarbonyl; C<sub>1</sub>-C<sub>20</sub> alkoxy; C<sub>1</sub>-C<sub>20</sub> alkylamino; C<sub>1</sub>-C<sub>20</sub> alkylamino; C<sub>1</sub>-C<sub>20</sub> alkylamino; carboxyl; cyano; halo; or hydroxy;

B, B' and B" each independently represent;  $C_2$ - $C_{20}$  alkenoyl; aroyl; aralkanoyl; nitro; optionally substituted, linear or branched  $C_1$ - $C_{20}$  alkyl; or optionally substituted, linear or branched  $C_2$ - $C_{20}$  alkenyl;

or A and B jointly, A' and B' jointly, or A" and B" jointly, independently represent a methylenedioxy or ethylenedioxy group; and

X and X' independently represent >NH, >NR'", -O-, or -S-.

# 2. A compound represented by the following formula 1:

$$Z = \begin{bmatrix} A''_n \\ B''_m \end{bmatrix} X$$

$$\begin{bmatrix} 1 \end{bmatrix}$$

#### wherein Z is

H; A"; or B";

n, m, q and r independently represent integers from zero to 4 provided that  $n + m \le 4$  and  $q + r \le 4$ ; p and s independently represent integers from zero to 5 provided that  $p + s \le 5$ ; a and b represent double bonds which may be present or absent; when present, the double bonds may be in the E or Z configuration and, when absent, the resulting stereocenters may have the R-or S- configuration;

R and R' each independently represent a hydrogen atom; linear or branched  $C_1$ - $C_{20}$  alkyl; linear or branched  $C_2$ - $C_{20}$  alkenyl; - $CO_2Z'$ ; - $CO_2R'''$ ; - $NH_2$ ; -NHR'''; - $NR_2'''$ ; -OH; -OR'''; - $CONR_2''''$ ; halogen atom; optionally substituted linear or branched  $C_1$ - $C_{20}$  alkyl; optionally substituted linear or branched  $C_2$ - $C_{20}$  alkenyl;

R" independently represents a hydrogen atom; linear or branched  $C_1$ - $C_{20}$  alkyl; linear or branched  $C_2$ - $C_{20}$  alkenyl; - $CO_2Z'$ ; - $CO_2R'''$ ; - $NH_2$ ; - $NH_2$ ; - $NH_2$ "; - $NR_2$ "; -OH; -OR"; halogen atom; optionally substituted linear or branched  $C_1$ - $C_{20}$  alkyl; optionally substituted linear or branched  $C_2$ - $C_{20}$  alkenyl;

R''' independently represents a linear or branched  $C_1$ - $C_{20}$  alkyl; linear or branched  $C_2$ - $C_{20}$  alkenyl; or  $-(CH_2)_x$ -Ar, where x represents an integer from 1 to 6 and Ar represents aryl;

R'''' independently represents a hydrogen atom; optionally substituted  $C_1$ - $C_{20}$  alkyl; optionally substituted  $C_1$ - $C_{20}$  alkoxy; optionally substituted  $C_2$ - $C_{20}$  alkenyl; optionally substituted  $C_6$ - $C_{10}$  aryl; or  $NR_2$ ''' represents a cyclic moiety;

Z' represents a hydrogen atom or a pharmaceutically acceptable counter-ion;

A, and A' each independently represent a hydrogen atom;  $C_1$ - $C_{20}$  acylamino;  $C_1$ - $C_{20}$  acyloxy;  $C_1$ - $C_{20}$  alkanoyl;  $C_1$ - $C_{20}$  alkoxycarbonyl;  $C_1$ - $C_{20}$  alkoxy;  $C_1$ - $C_{20}$  alkylamino;  $C_1$ - $C_{20}$  alkylamino; carboxyl; cyano; halo; or hydroxy;

A" independently represent a hydrogen atom;  $C_1$ - $C_{20}$  acylamino;  $C_1$ - $C_{20}$  acyloxy;  $C_1$ - $C_{20}$  alkanoyl;  $C_1$ - $C_{20}$  alkoxycarbonyl;  $C_1$ - $C_{20}$  alkylamino;  $C_1$ - $C_{20}$  alkylamino; carboxyl; cyano; or halo;

B, B' and B" each independently represent;  $C_2$ - $C_{20}$  alkenoyl; aroyl; aralkanoyl; nitro; optionally substituted, linear or branched  $C_1$ - $C_{20}$  alkyl; or optionally substituted, linear or branched  $C_2$ - $C_{20}$  alkenyl;

or A and B jointly, A' and B' jointly, or A" and B" jointly, independently represent a methylenedioxy or ethylenedioxy group; and

X and X' independently represent >NH, >NR''', -O-, or -S-.

# 3. A compound represented by the following formula 1:

$$Z = \begin{bmatrix} A''_n & X' \\ B''_m & A''_n \\ R'' & A''_n \\ & & & & & \\ & & & & \\ & & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & \\ & & & \\ & \\ & & \\ & \\ & & \\ & \\ & \\ & \\ & & \\ & \\ & \\ & \\ & \\ & \\ & \\ & \\$$

## wherein Z is

or

n, m, q and r independently represent integers from zero to 4 provided that  $n+m \le 4$  and  $q+r \le 4$ ; p and s independently represent integers from zero to 5 provided that  $p+s \le 5$ ; a, b and c represent double bonds which may be present or absent; when present, the double bonds may be in the E or Z configuration and, when absent, the resulting stereocenters may have the R- or S- configuration;

R independently represents a hydrogen atom; linear or branched C<sub>1</sub>-C<sub>20</sub> alkyl; linear or branched C<sub>2</sub>-C<sub>20</sub> alkenyl; -CO<sub>2</sub>Z'; -CO<sub>2</sub>R'''; -NH<sub>2</sub>; -NHR'''; -NR<sub>2</sub>'''; -OH; -OR'''; -CONR<sub>2</sub>''''; halogen atom; optionally substituted linear or branched C<sub>1</sub>-C<sub>20</sub> alkyl; optionally substituted linear or branched C<sub>2</sub>-C<sub>20</sub> alkenyl;

R' independently represents a hydrogen atom; linear or branched  $C_1$ - $C_{20}$  alkyl; linear or branched  $C_2$ - $C_{20}$  alkenyl; - $CO_2Z'$ ; - $CO_2R'''$ ; - $NH_2$ ; - $NH_2$ ; - $NH_2$ '''; - $NR_2$ '''; -OR'''; - $CONR_2$ '''; halogen atom; optionally substituted linear or branched  $C_1$ - $C_{20}$  alkyl; optionally substituted linear or branched  $C_2$ - $C_{20}$  alkenyl;

R" independently represents a hydrogen atom; linear or branched  $C_1$ - $C_{20}$  alkyl; linear or branched  $C_2$ - $C_{20}$  alkenyl; - $CO_2Z'$ ; - $CO_2R'''$ ; - $NH_2$ ; -NHR'''; - $NR_2'''$ ; -OH; -OR'''; halogen atom; optionally substituted linear or branched  $C_1$ - $C_{20}$  alkyl; optionally substituted linear or branched  $C_2$ - $C_{20}$  alkenyl;

R''' independently represents a linear or branched  $C_1$ - $C_{20}$  alkyl; linear or branched  $C_2$ - $C_{20}$  alkenyl; or  $-(CH_2)_x$ -Ar, where x represents an integer from 1 to 6 and Ar represents aryl;

R'''' independently represents a hydrogen atom; optionally substituted  $C_1$ - $C_{20}$  alkyl; optionally substituted  $C_1$ - $C_{20}$  alkoxy; optionally substituted  $C_2$ - $C_{20}$  alkenyl; optionally substituted  $C_6$ - $C_{10}$  aryl; or  $NR_2$ ''' represents a cyclic moiety;

Z' represents a hydrogen atom or a pharmaceutically acceptable counter-ion;

A, A' and A" each independently represent a hydrogen atom; C<sub>1</sub>-C<sub>20</sub> acylamino; C<sub>1</sub>-C<sub>20</sub> acyloxy; C<sub>1</sub>-C<sub>20</sub> alkanoyl; C<sub>1</sub>-C<sub>20</sub> alkoxycarbonyl; C<sub>1</sub>-C<sub>20</sub> alkoxy; C<sub>1</sub>-C<sub>20</sub> alkylamino; C<sub>1</sub>-C<sub>20</sub> alkylamino; C<sub>1</sub>-C<sub>20</sub> alkylamino; carboxyl; cyano; halo; or hydroxy;

B, B' and B" each independently represent;  $C_2$ - $C_{20}$  alkenoyl; aroyl; aralkanoyl; nitro; optionally substituted, linear or branched  $C_1$ - $C_{20}$  alkyl; or optionally substituted, linear or branched  $C_2$ - $C_{20}$  alkenyl;

or A and B jointly, A' and B' jointly, or A" and B" jointly, independently represent a methylenedioxy or ethylenedioxy group; and

X and X' independently represent >NH, >NR'", -O-, or -S-.

# 4. A compound represented by the following formula 1:

$$Z = \begin{bmatrix} A^{"}_{n} \\ B^{"}_{m} \end{bmatrix} X$$

$$\begin{bmatrix} 1 \end{bmatrix}$$

wherein Z is

n, m, q and r independently represent integers from zero to 4 provided that  $n + m \le 4$  and  $q + r \le 4$ ; p and s independently represent integers from zero to 5 provided that  $p + s \le 5$ ; a and b represent double bonds which may be present or absent; when present, the double bonds may be in the E or Z configuration and, when absent, the resulting stereocenters may have the R-or S- configuration;

R and R' each independently represent a hydrogen atom; linear or branched  $C_1$ - $C_{20}$  alkyl; linear or branched  $C_2$ - $C_{20}$  alkenyl; - $CO_2Z'$ ; - $CO_2R'''$ ; - $NH_2$ ; -NHR'''; - $NR_2'''$ ; -OH; -OR'''; halogen atom; optionally substituted linear or branched  $C_1$ - $C_{20}$  alkyl; optionally substituted linear or branched  $C_2$ - $C_{20}$  alkenyl;

R" independently represents a hydrogen atom; linear or branched  $C_1$ - $C_{20}$  alkyl; linear or branched  $C_2$ - $C_{20}$  alkenyl; - $CO_2Z'$ ; - $CO_2R'''$ ; - $NH_2$ ; - $NH_2$ "; - $NH_2$ "; - $NH_2$ "; -OH; -OR'''; halogen atom; optionally substituted linear or branched  $C_1$ - $C_{20}$  alkyl; optionally substituted linear or branched  $C_2$ - $C_{20}$  alkenyl;

R''' independently represents a linear or branched  $C_1$ - $C_{20}$  alkyl; linear or branched  $C_2$ - $C_{20}$  alkenyl; or  $-(CH_2)_x$ -Ar, where x represents an integer from 1 to 6 and Ar represents aryl;

Z' represents a hydrogen atom or a pharmaceutically acceptable counter-ion;

A, A' and A" each independently represent a hydrogen atom; C<sub>1</sub>-C<sub>20</sub> acylamino; C<sub>1</sub>-C<sub>20</sub> acyloxy; C<sub>1</sub>-C<sub>20</sub> alkanoyl; C<sub>1</sub>-C<sub>20</sub> alkoxycarbonyl; C<sub>1</sub>-C<sub>20</sub> alkoxy; C<sub>1</sub>-C<sub>20</sub> alkylamino; C<sub>1</sub>-C<sub>20</sub> alkylamino; carboxyl; cyano; halo; or hydroxy;

B, B' and B" each independently represent;  $C_2$ - $C_{20}$  alkenoyl; aroyl; aralkanoyl; nitro; optionally substituted, linear or branched  $C_1$ - $C_{20}$  alkyl; or optionally substituted, linear or branched  $C_2$ - $C_{20}$  alkenyl;

or A and B jointly, A' and B' jointly, or A" and B" jointly, independently represent a methylenedioxy or ethylenedioxy group; and

X and X' independently represent >NH, >NR'", -O-, or -S-.

5. A compound represented by the following formula 1:

$$Z = \begin{bmatrix} A''_n & X' \\ B''_m & A''_n \\ R'' & A''_n \\ & & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & \\ & & & \\ & &$$

wherein Z is

H; A"; or B";

n, m, q and r independently represent integers from zero to 4 provided that  $n + m \le 4$  and  $q + r \le 4$ ; p and s independently represent integers from zero to 5 provided that  $p + s \le 5$ ; a and b represent double bonds which may be present or absent; when present, the double bonds may be in the E or Z configuration and, when absent, the resulting stereocenters may have the R-or S- configuration;

R and R' each independently represent a hydrogen atom; linear or branched  $C_1$ - $C_{20}$  alkyl; linear or branched  $C_2$ - $C_{20}$  alkenyl; - $CO_2Z'$ ; - $CO_2R'''$ ; - $NH_2$ ; -NHR'''; - $NR_2'''$ ; -OH; -OR'''; halogen atom; optionally substituted linear or branched  $C_1$ - $C_{20}$  alkyl; optionally substituted linear or branched  $C_2$ - $C_{20}$  alkenyl;

R" independently represents a hydrogen atom; linear or branched  $C_1$ - $C_{20}$  alkyl; linear or branched  $C_2$ - $C_{20}$  alkenyl; - $CO_2Z'$ ; - $CO_2R'''$ ; - $NH_2$ ; - $NH_2$ ; - $NH_2$ "; - $NR_2$ "; -OH; -OR"; halogen atom; optionally substituted linear or branched  $C_1$ - $C_{20}$  alkyl; optionally substituted linear or branched  $C_2$ - $C_{20}$  alkenyl;

R''' independently represents a linear or branched  $C_1$ - $C_{20}$  alkyl; linear or branched  $C_2$ - $C_{20}$  alkenyl; or  $-(CH_2)_x$ -Ar, where x represents an integer from 1 to 6 and Ar represents aryl;

Z' represents a hydrogen atom or a pharmaceutically acceptable counter-ion;

A, and A' each independently represent a hydrogen atom;  $C_1$ - $C_{20}$  acylamino;  $C_1$ - $C_{20}$  acyloxy;  $C_1$ - $C_{20}$  alkanoyl;  $C_1$ - $C_{20}$  alkoxycarbonyl;  $C_1$ - $C_{20}$  alkoxy;  $C_1$ - $C_{20}$  alkylamino;  $C_1$ - $C_{20}$  alkylamino; carboxyl; cyano; halo; or hydroxy;

A" independently represent a hydrogen atom;  $C_1$ - $C_{20}$  acylamino;  $C_1$ - $C_{20}$  acyloxy;  $C_1$ - $C_{20}$  alkanoyl;  $C_1$ - $C_{20}$  alkoxycarbonyl;  $C_1$ - $C_{20}$  alkylamino;  $C_1$ - $C_{20}$  alkylamino; carboxyl; cyano; or halo;

B, B' and B" each independently represent;  $C_2$ - $C_{20}$  alkenoyl; aroyl; aralkanoyl; nitro; optionally substituted, linear or branched  $C_1$ - $C_{20}$  alkyl; or optionally substituted, linear or branched  $C_2$ - $C_{20}$  alkenyl;

or A and B jointly, A' and B' jointly, or A" and B" jointly, independently represent a methylenedioxy or ethylenedioxy group; and

X and X' independently represent >NH, >NR'", -O-, or -S-.

6. A compound represented by the following formula 1:

$$Z = \begin{bmatrix} A''_n & A''_n$$

wherein Z is

or

$$A_p$$
 $C$ 
 $R'$ 
 $B_s$ 

n, m, q and r independently represent integers from zero to 4 provided that  $n + m \le 4$  and  $q + r \le 4$ ; p and s independently represent integers from zero to 5 provided that  $p + s \le 5$ ; a, b and c represent double bonds which may be present or absent; when present, the double bonds may be in the E or Z configuration and, when absent, the resulting stereocenters may have the R- or S- configuration;

R independently represents a hydrogen atom; linear or branched  $C_1$ - $C_{20}$  alkyl; linear or branched  $C_2$ - $C_{20}$  alkenyl; - $CO_2Z'$ ; - $CO_2R'''$ ; - $NH_2$ ; - $NH_2$ ; - $NH_2$ '''; - $NR_2$ '''; -OH; -OR'''; halogen atom; optionally substituted linear or branched  $C_1$ - $C_{20}$  alkyl; optionally substituted linear or branched  $C_2$ - $C_{20}$  alkenyl;

R' independently represents a hydrogen atom; linear or branched  $C_1$ - $C_{20}$  alkyl; linear or branched  $C_2$ - $C_{20}$  alkenyl; - $CO_2Z'$ ; - $CO_2R'''$ ; - $NH_2$ ; - $NH_2$ ; - $NH_2$ '''; - $NR_2$ '''; -OR'''; - $CONR_2$ '''; halogen atom; optionally substituted linear or branched  $C_1$ - $C_{20}$  alkyl; optionally substituted linear or branched  $C_2$ - $C_{20}$  alkenyl;

R" independently represents a hydrogen atom; linear or branched  $C_1$ - $C_{20}$  alkyl; linear or branched  $C_2$ - $C_{20}$  alkenyl; - $CO_2Z'$ ; - $CO_2R'''$ ; - $NH_2$ ; -NHR'''; - $NR_2'''$ ; -OH; -OR'''; halogen atom; optionally substituted linear or branched  $C_1$ - $C_{20}$  alkyl; optionally substituted linear or branched  $C_2$ - $C_{20}$  alkenyl;

R''' independently represents a linear or branched  $C_1$ - $C_{20}$  alkyl; linear or branched  $C_2$ - $C_{20}$  alkenyl; or  $-(CH_2)_x$ -Ar, where x represents an integer from 1 to 6 and Ar represents aryl;

Z' represents a hydrogen atom or a pharmaceutically acceptable counter-ion;

A, A' and A" each independently represent a hydrogen atom; C<sub>1</sub>-C<sub>20</sub> acylamino; C<sub>1</sub>-C<sub>20</sub> acyloxy; C<sub>1</sub>-C<sub>20</sub> alkanoyl; C<sub>1</sub>-C<sub>20</sub> alkoxycarbonyl; C<sub>1</sub>-C<sub>20</sub> alkoxy; C<sub>1</sub>-C<sub>20</sub> alkylamino; C<sub>1</sub>-C<sub>20</sub> alkylamino; carboxyl; cyano; halo; or hydroxy;

B, B' and B" each independently represent;  $C_2$ - $C_{20}$  alkenoyl; aroyl; aralkanoyl; nitro; optionally substituted, linear or branched  $C_1$ - $C_{20}$  alkyl; or optionally substituted, linear or branched  $C_2$ - $C_{20}$  alkenyl;

or A and B jointly, A' and B' jointly, or A" and B" jointly, independently represent a methylenedioxy or ethylenedioxy group; and

X and X' independently represent >NH, >NR''', -O-, or -S-.

- 7. The compound of claim 1 that is 3-(3,5-dimethoxyphenyl)-2-{4-[4-(2,4-dioxothiazolidin-5-ylmethyl)-phenoxy]-phenyl}-acrylic acid.
- 8. The compound of claim 1 that is 3-(3,5-dimethoxy-phenyl)-2-{4-[4-(2,4-dioxo-thiazolidin-5-ylmethyl)-phenoxy]-phenyl}-acrylamide.
- 9. The compound of claim 1 that is 3-(3,5-dimethoxy-phenyl)-2-{4-[4-(2,4-dioxo-thiazolidin-5ylmethyl)-phenoxyl-phenyl}-N,N-dimethyl-acrylamide.

## 10. A pharmaceutical composition comprising:

## a) a compound represented by the following formula 1:

$$Z = \begin{bmatrix} A''_n & X' \\ B''_m & A''_n \end{bmatrix}$$

wherein Z is

n, m, q and r independently represent integers from zero to 4 provided that  $n + m \le 4$  and  $q + r \le 4$ ; p and s independently represent integers from zero to 5 provided that  $p + s \le 5$ ; a and b represent double bonds which may be present or absent; when present, the double bonds may be in the E or Z configuration and, when absent, the resulting stereocenters may have the R- or S-configuration;

R and R' each independently represent a hydrogen atom; linear or branched  $C_1$ - $C_{20}$  alkyl; linear or branched  $C_2$ - $C_{20}$  alkenyl; - $CO_2Z'$ ; - $CO_2R'''$ ; - $NH_2$ ; -NHR'''; - $NR_2'''$ ; -OH; -OR''';

-CONR<sub>2</sub>"; halogen atom; optionally substituted linear or branched  $C_1$ - $C_{20}$  alkyl; optionally substituted linear or branched  $C_2$ - $C_{20}$  alkenyl;

R" independently represents a hydrogen atom; linear or branched  $C_1$ - $C_{20}$  alkyl; linear or branched  $C_2$ - $C_{20}$  alkenyl; - $CO_2Z'$ ; - $CO_2R'''$ ; - $NH_2$ ; -NHR'''; - $NR_2'''$ ; -OH; -OR'''; halogen atom; optionally substituted linear or branched  $C_1$ - $C_{20}$  alkyl; optionally substituted linear or branched  $C_2$ - $C_{20}$  alkenyl;

R''' independently represents a linear or branched  $C_1$ - $C_{20}$  alkyl; linear or branched  $C_2$ - $C_{20}$  alkenyl; or – $(CH_2)_x$ -Ar, where x represents an integer from 1 to 6 and Ar represents aryl;

R'''' independently represents a hydrogen atom; optionally substituted  $C_1$ - $C_{20}$  alkyl; optionally substituted  $C_1$ - $C_{20}$  alkoxy; optionally substituted  $C_2$ - $C_{20}$  alkenyl; optionally substituted  $C_6$ - $C_{10}$  aryl; or  $NR_2$ ''' represents a cyclic moiety;

Z' represents a hydrogen atom or a pharmaceutically acceptable counter-ion;

A, A' and A" each independently represent a hydrogen atom;  $C_1$ - $C_{20}$  acylamino;  $C_1$ - $C_{20}$  acylamino;  $C_1$ - $C_{20}$  alkanoyl;  $C_1$ - $C_{20}$  alkoxycarbonyl;  $C_1$ - $C_{20}$  alkoxy;  $C_1$ - $C_{20}$  alkylamino;  $C_1$ - $C_{20}$  alkylamino; carboxyl; cyano; halo; or hydroxy;

B, B' and B" each independently represent;  $C_2$ - $C_{20}$  alkenoyl; aroyl; aralkanoyl; nitro; optionally substituted, linear or branched  $C_1$ - $C_{20}$  alkyl; or optionally substituted, linear or branched  $C_2$ - $C_{20}$  alkenyl;

or A and B jointly, A' and B' jointly, or A" and B" jointly, independently represent a methylenedioxy or ethylenedioxy group; and

X and X' independently represent >NH, >NR'", -O-, or -S-; and

b) a physiologically acceptable carrier.

#### 11. A pharmaceutical composition comprising:

## a) a compound represented by the following formula 1:

$$Z = \begin{bmatrix} A''_n & A''_n$$

wherein Z is

H; A"; or B";

n, m, q and r independently represent integers from zero to 4 provided that n +  $m \le 4$  and  $q + r \le 4$ ; p and s independently represent integers from zero to 5 provided that  $p + s \le 5$ ; a and b represent double bonds which may be present or absent; when present, the double bonds may be in the E or Z configuration and, when absent, the resulting stereocenters may have the R- or S-configuration;

R and R' each independently represent a hydrogen atom; linear or branched  $C_1$ - $C_{20}$  alkyl; linear or branched  $C_2$ - $C_{20}$  alkenyl; - $CO_2Z'$ ; - $CO_2R'''$ ; - $NH_2$ ; -NHR'''; - $NR_2'''$ ; -OH; -OR'''; - $CONR_2''''$ ; halogen atom; optionally substituted linear or branched  $C_1$ - $C_{20}$  alkyl; optionally substituted linear or branched  $C_2$ - $C_{20}$  alkenyl;

R'' independently represents a hydrogen atom; linear or branched  $C_1$ - $C_{20}$  alkyl; linear or branched  $C_2$ - $C_{20}$  alkenyl; - $CO_2Z'$ ; - $CO_2R'''$ ; - $NH_2$ ; -NHR'''; - $NR_2'''$ ; -OH; -OR'''; halogen atom; optionally substituted linear or branched  $C_1$ - $C_{20}$  alkyl; optionally substituted linear or branched  $C_2$ - $C_{20}$  alkenyl;

R''' independently represents a linear or branched  $C_1$ - $C_{20}$  alkyl; linear or branched  $C_2$ - $C_{20}$  alkenyl; or  $-(CH_2)_x$ -Ar, where x represents an integer from 1 to 6 and Ar represents aryl;

R'''' independently represents a hydrogen atom; optionally substituted  $C_1$ - $C_{20}$  alkyl; optionally substituted  $C_1$ - $C_{20}$  alkoxy; optionally substituted  $C_2$ - $C_{20}$  alkenyl; optionally substituted  $C_6$ - $C_{10}$  aryl; or  $NR_2$ ''' represents a cyclic moiety;

Z' represents a hydrogen atom or a pharmaceutically acceptable counter-ion;

A, and A' each independently represent a hydrogen atom;  $C_1$ - $C_{20}$  acylamino;  $C_1$ - $C_{20}$  acyloxy;  $C_1$ - $C_{20}$  alkanoyl;  $C_1$ - $C_{20}$  alkoxycarbonyl;  $C_1$ - $C_{20}$  alkoxy;  $C_1$ - $C_{20}$  alkylamino;  $C_1$ - $C_{20}$  alkylamino; carboxyl; cyano; halo; or hydroxy;

A" independently represent a hydrogen atom;  $C_1$ - $C_{20}$  acylamino;  $C_1$ - $C_{20}$  acyloxy;  $C_1$ - $C_{20}$  alkanoyl;  $C_1$ - $C_{20}$  alkoxycarbonyl;  $C_1$ - $C_{20}$  alkylamino;  $C_1$ - $C_{20}$  alkylamino; carboxyl; cyano; or halo;

B, B' and B" each independently represent;  $C_2$ - $C_{20}$  alkenoyl; aroyl; aralkanoyl; nitro; optionally substituted, linear or branched  $C_1$ - $C_{20}$  alkyl; or optionally substituted, linear or branched  $C_2$ - $C_{20}$  alkenyl;

or A and B jointly, A' and B' jointly, or A" and B" jointly, independently represent a methylenedioxy or ethylenedioxy group; and

X and X' independently represent >NH, >NR'", -O-, or -S-; and

b) a physiologically acceptable carrier.

# 12. A pharmaceutical composition comprising:

a) a compound represented by the following formula 1:

$$Z = \begin{bmatrix} A''_n & X' \\ B''_m & A''_n \\ & & & \\ & & \\ & &$$

wherein Z is

or

n, m, q and r independently represent integers from zero to 4 provided that n +  $m \le 4$  and  $q + r \le 4$ ; p and s independently represent integers from zero to 5 provided that  $p + s \le 5$ ; a, b and c represent double bonds which may be

present or absent; when present, the double bonds may be in the E or Z configuration and, when absent, the resulting stereocenters may have the R- or S- configuration;

R independently represents a hydrogen atom; linear or branched  $C_1$ - $C_{20}$  alkyl; linear or branched  $C_2$ - $C_{20}$  alkenyl; - $CO_2Z'$ ; - $CO_2R'''$ ; - $NH_2$ ; - $NH_2$ '''; - $NH_2$ ''''; - $NH_2$ '''; - $NH_2$ ''''

R' independently represents a hydrogen atom; linear or branched  $C_1$ - $C_{20}$  alkyl; linear or branched  $C_2$ - $C_{20}$  alkenyl; - $CO_2Z'$ ; - $CO_2R'''$ ; - $NH_2$ ; -NHR'''; - $NR_2'''$ ; -OR'''; - $CONR_2'''$ ; halogen atom; optionally substituted linear or branched  $C_1$ - $C_{20}$  alkyl; optionally substituted linear or branched  $C_2$ - $C_{20}$  alkenyl;

R" independently represents a hydrogen atom; linear or branched  $C_1$ - $C_{20}$  alkyl; linear or branched  $C_2$ - $C_{20}$  alkenyl; - $CO_2Z'$ ; - $CO_2R'''$ ; - $NH_2$ ; -NHR'''; - $NR_2'''$ ; -OH; -OR'''; halogen atom; optionally substituted linear or branched  $C_1$ - $C_{20}$  alkyl; optionally substituted linear or branched  $C_2$ - $C_{20}$  alkenyl;

R''' independently represents a linear or branched  $C_1$ - $C_{20}$  alkyl; linear or branched  $C_2$ - $C_{20}$  alkenyl; or  $-(CH_2)_x$ -Ar, where x represents an integer from 1 to 6 and Ar represents aryl;

R'''' independently represents a hydrogen atom; optionally substituted  $C_1$ - $C_{20}$  alkyl; optionally substituted  $C_1$ - $C_{20}$  alkoxy; optionally substituted  $C_2$ - $C_{20}$  alkenyl; optionally substituted  $C_6$ - $C_{10}$  aryl; or  $NR_2$ ''' represents a cyclic moiety;

Z' represents a hydrogen atom or a pharmaceutically acceptable counter-ion;

A, A' and A" each independently represent a hydrogen atom; C<sub>1</sub>-C<sub>20</sub> acylamino; C<sub>1</sub>-C<sub>20</sub> acyloxy; C<sub>1</sub>-C<sub>20</sub> alkanoyl; C<sub>1</sub>-C<sub>20</sub> alkoxycarbonyl; C<sub>1</sub>-C<sub>20</sub> alkoxy; C<sub>1</sub>-C<sub>20</sub> alkylamino; C<sub>1</sub>-C<sub>20</sub> alkylamino; carboxyl; cyano; halo; or hydroxy;

B, B' and B" each independently represent;  $C_2$ - $C_{20}$  alkenoyl; aroyl; aralkanoyl; nitro; optionally substituted, linear or branched  $C_1$ - $C_{20}$  alkyl; or optionally substituted, linear or branched  $C_2$ - $C_{20}$  alkenyl;

or A and B jointly, A' and B' jointly, or A" and B" jointly, independently represent a methylenedioxy or ethylenedioxy group; and

X and X' independently represent >NH, >NR'", -O-, or -S-; and

- b) a physiologically acceptable carrier.
- 13. A pharmaceutical composition comprising:
  - a) a compound represented by the following formula 1:

$$Z = \begin{bmatrix} A''_n \\ B''_m \end{bmatrix} X$$

$$\begin{bmatrix} 1 \end{bmatrix}$$

wherein Z is

n, m, q and r independently represent integers from zero to 4 provided that n +  $m \le 4$  and  $q + r \le 4$ ; p and s independently represent integers from zero to 5

provided that  $p + s \le 5$ ; a and b represent double bonds which may be present or absent; when present, the double bonds may be in the E or Z configuration and, when absent, the resulting stereocenters may have the R- or S-configuration;

R and R' each independently represent a hydrogen atom; linear or branched  $C_1$ - $C_{20}$  alkyl; linear or branched  $C_2$ - $C_{20}$  alkenyl; - $CO_2Z'$ ; - $CO_2R'''$ ; - $NH_2$ ; -NHR'''; - $NR_2'''$ ; -OH; -OR'''; halogen atom; optionally substituted linear or branched  $C_1$ - $C_{20}$  alkyl; optionally substituted linear or branched  $C_2$ - $C_{20}$  alkenyl;

R'' independently represents a hydrogen atom; linear or branched  $C_1$ - $C_{20}$  alkyl; linear or branched  $C_2$ - $C_{20}$  alkenyl; - $CO_2Z'$ ; - $CO_2R'''$ ; - $NH_2$ ; -NHR'''; - $NR_2'''$ ; -OH; -OR'''; halogen atom; optionally substituted linear or branched  $C_1$ - $C_{20}$  alkyl; optionally substituted linear or branched  $C_2$ - $C_{20}$  alkenyl;

R''' independently represents a linear or branched  $C_1$ - $C_{20}$  alkyl; linear or branched  $C_2$ - $C_{20}$  alkenyl; or  $-(CH_2)_x$ -Ar, where x represents an integer from 1 to 6 and Ar represents aryl;

Z' represents a hydrogen atom or a pharmaceutically acceptable counter-ion;

A, A' and A" each independently represent a hydrogen atom;  $C_1$ - $C_{20}$  acylamino;  $C_1$ - $C_{20}$  acylamino;  $C_1$ - $C_{20}$  alkanoyl;  $C_1$ - $C_{20}$  alkoxy;  $C_1$ - $C_{20}$  alkylamino;  $C_1$ - $C_{20}$  alkylamino; carboxyl; cyano; halo; or hydroxy;

B, B' and B" each independently represent;  $C_2$ - $C_{20}$  alkenoyl; aroyl; aralkanoyl; nitro; optionally substituted, linear or branched  $C_1$ - $C_{20}$  alkyl; or optionally substituted, linear or branched  $C_2$ - $C_{20}$  alkenyl;

or A and B jointly, A' and B' jointly, or A" and B" jointly, independently represent a methylenedioxy or ethylenedioxy group; and

X and X' independently represent >NH, >NR'", -O-, or -S-; and

b) a physiologically acceptable carrier.

#### 14. A pharmaceutical composition comprising:

a) a compound represented by the following formula 1:

$$Z = \begin{bmatrix} A^{"}_{n} \\ B^{"}_{m} \end{bmatrix} X$$

$$R^{"}$$

$$\begin{bmatrix} 1 \end{bmatrix}$$

wherein Z is

H; A"; or B";

n, m, q and r independently represent integers from zero to 4 provided that n +  $m \le 4$  and  $q + r \le 4$ ; p and s independently represent integers from zero to 5 provided that  $p + s \le 5$ ; a and b represent double bonds which may be present or absent; when present, the double bonds may be in the E or Z configuration and, when absent, the resulting stereocenters may have the R- or S-configuration;

R and R' each independently represent a hydrogen atom; linear or branched C<sub>1</sub>-C<sub>20</sub> alkyl; linear or branched C<sub>2</sub>-C<sub>20</sub> alkenyl; -CO<sub>2</sub>Z'; -CO<sub>2</sub>R'''; -NH<sub>2</sub>; -NHR'''; -NR<sub>2</sub>'''; -OH; -OR'''; halogen atom; optionally substituted linear or branched C<sub>1</sub>-C<sub>20</sub> alkyl; optionally substituted linear or branched C<sub>2</sub>-C<sub>20</sub> alkenyl;

R" independently represents a hydrogen atom; linear or branched  $C_1$ - $C_{20}$  alkyl; linear or branched  $C_2$ - $C_{20}$  alkenyl; - $CO_2Z'$ ; - $CO_2R'''$ ; - $NH_2$ ; -NHR'''; - $NR_2'''$ ; -OH; -OR'''; halogen atom; optionally substituted linear or branched  $C_1$ - $C_{20}$  alkyl; optionally substituted linear or branched  $C_2$ - $C_{20}$  alkenyl;

R''' independently represents a linear or branched  $C_1$ - $C_{20}$  alkyl; linear or branched  $C_2$ - $C_{20}$  alkenyl; or  $-(CH_2)_x$ -Ar, where x represents an integer from 1 to 6 and Ar represents aryl;

Z' represents a hydrogen atom or a pharmaceutically acceptable counter-ion;

A, and A' each independently represent a hydrogen atom;  $C_1$ - $C_{20}$  acylamino;  $C_1$ - $C_{20}$  acyloxy;  $C_1$ - $C_{20}$  alkanoyl;  $C_1$ - $C_{20}$  alkoxycarbonyl;  $C_1$ - $C_{20}$  alkoxy;  $C_1$ - $C_{20}$  alkylamino;  $C_1$ - $C_{20}$  alkylamino; carboxyl; cyano; halo; or hydroxy;

A" independently represent a hydrogen atom;  $C_1$ - $C_{20}$  acylamino;  $C_1$ - $C_{20}$  acyloxy;  $C_1$ - $C_{20}$  alkanoyl;  $C_1$ - $C_{20}$  alkoxycarbonyl;  $C_1$ - $C_{20}$  alkylamino;  $C_1$ - $C_{20}$  alkylamino; carboxyl; cyano; or halo;

B, B' and B" each independently represent;  $C_2$ - $C_{20}$  alkenoyl; aroyl; aralkanoyl; nitro; optionally substituted, linear or branched  $C_1$ - $C_{20}$  alkyl; or optionally substituted, linear or branched  $C_2$ - $C_{20}$  alkenyl;

or A and B jointly, A' and B' jointly, or A" and B" jointly, independently represent a methylenedioxy or ethylenedioxy group; and

X and X' independently represent >NH, >NR'", -O-, or -S-; and

- b) a physiologically acceptable carrier.
- 15. A pharmaceutical composition comprising:
  - a) a compound represented by the following formula 1:

$$Z = \begin{bmatrix} A''_n \\ B''_m \\ R'' \end{bmatrix} X$$

$$\begin{bmatrix} 1 \end{bmatrix}$$

wherein Z is

or  $A_p$  C R'

n, m, q and r independently represent integers from zero to 4 provided that n +  $m \le 4$  and  $q + r \le 4$ ; p and s independently represent integers from zero to 5 provided that  $p + s \le 5$ ; a, b and c represent double bonds which may be present or absent; when present, the double bonds may be in the E or Z

configuration and, when absent, the resulting stereocenters may have the R- or S- configuration;

R independently represents a hydrogen atom; linear or branched  $C_1$ - $C_{20}$  alkyl; linear or branched  $C_2$ - $C_{20}$  alkenyl; - $CO_2Z'$ ; - $CO_2R'''$ ; - $NH_2$ ; -NHR'''; - $NR_2'''$ ; -OH; -OR'''; halogen atom; optionally substituted linear or branched  $C_1$ - $C_{20}$  alkyl; optionally substituted linear or branched  $C_2$ - $C_{20}$  alkenyl;

R' independently represents a hydrogen atom; linear or branched C<sub>1</sub>-C<sub>20</sub> alkyl; linear or branched C<sub>2</sub>-C<sub>20</sub> alkenyl; -CO<sub>2</sub>Z'; -CO<sub>2</sub>R'''; -NH<sub>2</sub>; -NHR'''; -NR<sub>2</sub>'''; -OR'''; -CONR<sub>2</sub>''''; halogen atom; optionally substituted linear or branched C<sub>1</sub>-C<sub>20</sub> alkyl; optionally substituted linear or branched C<sub>2</sub>-C<sub>20</sub> alkenyl;

R" independently represents a hydrogen atom; linear or branched  $C_1$ - $C_{20}$  alkyl; linear or branched  $C_2$ - $C_{20}$  alkenyl; - $CO_2Z'$ ; - $CO_2R'''$ ; - $NH_2$ ; -NHR'''; - $NR_2'''$ ; -OH; -OR'''; halogen atom; optionally substituted linear or branched  $C_1$ - $C_{20}$  alkyl; optionally substituted linear or branched  $C_2$ - $C_{20}$  alkenyl;

R''' independently represents a linear or branched  $C_1$ - $C_{20}$  alkyl; linear or branched  $C_2$ - $C_{20}$  alkenyl; or  $-(CH_2)_x$ -Ar, where x represents an integer from 1 to 6 and Ar represents aryl;

Z' represents a hydrogen atom or a pharmaceutically acceptable counter-ion;

A, A' and A" each independently represent a hydrogen atom; C<sub>1</sub>-C<sub>20</sub> acylamino; C<sub>1</sub>-C<sub>20</sub> acyloxy; C<sub>1</sub>-C<sub>20</sub> alkanoyl; C<sub>1</sub>-C<sub>20</sub> alkoxycarbonyl; C<sub>1</sub>-C<sub>20</sub> alkoxy; C<sub>1</sub>-C<sub>20</sub> alkylamino; C<sub>1</sub>-C<sub>20</sub> alkylcarboxylamino; carboxyl; cyano; halo; or hydroxy;

B, B' and B" each independently represent;  $C_2$ - $C_{20}$  alkenoyl; aroyl; aralkanoyl; nitro; optionally substituted, linear or branched  $C_1$ - $C_{20}$  alkyl; or optionally substituted, linear or branched  $C_2$ - $C_{20}$  alkenyl;

or A and B jointly, A' and B' jointly, or A" and B" jointly, independently represent a methylenedioxy or ethylenedioxy group; and

X and X' independently represent >NH, >NR", -O-, or -S-; and

- b) a physiologically acceptable carrier.
- 16. The pharmaceutical composition of claim 10, wherein said compound represented by formula I is 3-(3,5-dimethoxyphenyl)-2-{4-[4-(2,4-dioxothiazolidin-5-ylmethyl)-phenoxy]-phenyl}-acrylic acid.
- 17. The pharmaceutical composition of claim 10, wherein said compound represented by formula I is 3-(3,5-dimethoxy-phenyl)-2-{4-[4-(2,4-dioxo-thiazolidin-5-ylmethyl)-phenoxy]-phenyl}-acrylamide.
- 18. The pharmaceutical composition of claim 10, wherein said compound represented by formula I is 3-(3,5-dimethoxy-phenyl)-2-{4-[4-(2,4-dioxo-thiazolidin-5ylmethyl)-phenoxy]-phenyl}-N,N-dimethyl-acrylamide.